WHAT IS CLAIMED IS:

1. A method of trimming a parametric surface, comprising:

obtaining a trimming texture based on a trimming curve for the parametric surface; and

applying the trimming texture to the parametric surface.

2. The method of claim 1, further comprising rendering an image based on the parametric surface and the trimming texture.

3. The method of claim 2, wherein said rendering comprises:

drawing a plurality of pixels only in a solid portion of the image that is not a trimmed portion.

4. The method of claim 2, wherein the trimming texture comprises:

a first portion comprising a rendered section of the parametric surface; and

a second portion comprising a trimmed section of the parametric surface.

5. The method of claim 1 further comprising drawing a plurality of pixels based on an allocation of the trimming texture relative to the parametric surface.

6. The method of claim 1, wherein obtaining is performed in a pre-rendering process and applying is performed in a run-time process.

7. The method of claim 2, further comprising:

obtaining a material texture; and

drawing the material texture on the parametric surface based on the trimming texture.

8. The method of claim 1, further comprising obtaining the trimming texture from a plurality of trimming curves for the parametric surface.

9. A method of trimming a parametric surface comprising:

obtaining the parametric surface;

obtaining a trimming curve for the parametric surface;

mapping the trimming curve on a trimming texture to create a trimmed section and a rendered section;

obtaining a plurality of polygons approximating the parametric surface; and

rendering the parametric surface based on an application of the trimming texture to the polygons.

10. The method of claim 9, comprising:

obtaining a material texture for the parametric surface; and

applying the material texture to a region of the parametric surface corresponding to the rendered section of the trimming texture.

11. An article comprising a computer-readable medium that stores instructions for use in trimming a parametric surface, the instructions for causing the computer to:

obtain a trimming texture based on a trimming curve for the parametric surface; and

apply the trimming texture to the parametric surface.

12. The article of claim 11, further comprising instructions for causing the computer to render an image based on the parametric surface and the trimming texture.

13. The article of claim 11, further comprising instructions for causing the computer to render an image by drawing a plurality of pixels in a solid portion of the image that is not a trimmed portion.

14. The article of claim 12, further comprising instructions for causing the trimming texture to include:

a first portion comprising a rendered section of the parametric surface; and

a second portion comprising a trimmed section of the parametric surface.

15. The article of claim 11, further comprising instructions for causing the computer to draw a plurality of pixels based on an allocation of the trimming texture relative to the parametric surface.

16. The article of claim 12, further comprising instructions for causing the computer to:

obtain a material texture; and

draw the material texture on the parametric surface based on the trimming texture.

17. The article of claim 11, further comprising instructions for causing the computer to obtain the trimming texture from a plurality of trimming curves for the parametric surface.

18. An article comprising a computer-readable medium that stores instructions for use in trimming a parametric surface, the instruction for causing the computer to:

obtain the parametric surface;

obtain a trimming curve for the parametric surface;

map the trimming curve on a trimming texture to create a trimmed section and a rendered section;

obtain a plurality of polygons approximating the parametric surface; and

render the parametric surface based on an application of the trimming texture to the polygons.

19. The article of claim 18, further comprising instructions for causing the computer to:

obtain a material texture for the parametric surface; and

apply the material texture to a region of the parametric surface corresponding to the rendered section of the trimming texture.

20. An apparatus for use in trimming a parametric surface, comprising:

a memory which stores computer instructions; and

a processor that executes the computer instructions to:

obtain a trimming texture based on a trimming curve for the parametric surface; and

apply the trimming texture to the parametric surface.

21. The apparatus of claim 20, further comprising instructions to cause the computer to render an image based on the parametric surface and the trimming texture.

22. The apparatus of claim 21, further comprising instructions for causing the computer to render an image by drawing a plurality of pixels in a solid portion of the image that is not a trimmed portion.

23. The apparatus of claim 21, further comprising instructions for causing the trimming texture to include:

an first portion comprising a rendered section of the parametric surface; and

a second portion comprising a trimmed section of the parametric surface.

24. The apparatus of claim 20, further comprising instructions for causing the computer to draw a plurality of pixels based on an allocation of the trimming texture relative to the parametric surface.

25. The apparatus of claim 21, further comprising instructions for causing the computer to;

obtain a material texture; and

draw the material texture on the parametric surface based on the trimming texture.

26. The apparatus of claim 20, further comprising instructions for causing the computer to obtain the trimming

texture from a plurality of trimming curves for the parametric surface.

27. An apparatus comprising a computer-readable medium that stores instructions for use in trimming a parametric surface, the instruction for causing the computer to:

obtain the parametric surface;

obtain a trimming curve for the parametric surface;

map the trimming curve on a trimming texture to create a trimmed section and a rendered section;

obtain a plurality of polygons approximating the parametric surface; and

render the parametric surface based on an application of the trimming texture to the polygons.

28. The apparatus of claim 27, further comprising instructions for causing the computer to:

obtain a material texture for the parametric surface; and

apply the material texture to a region of the parametric surface corresponding to the rendered section of the trimming texture.

29. A method for use in rendering images from data for an original three-dimensional model, comprising:

obtaining a trimming texture based on a trimming curve for the three-dimensional model;

applying the trimming texture to the three-dimensional model; and

rendering an image.

30. The method in claim 29 wherein rendering comprises drawing a plurality of pixels based on an allocation of the trimming texture relative to the three-dimensional model.

APPENDIX

Let S(u,v) be a vector-valued function that generates the parametric surface.

Let $C_1(t)$, $C_2(t)$, …, $C_n(t)$ be vector-valued functions that generate trimming curves for the surface.

Assume the existence of a function, Tessellate(), that generates a list of triangles approximating the surface. Also assume that the triangles generated by Tessellate() have texture coordinates that correspond to the parameters u and v used to generate the surface points.

Assume the existence of a function, DrawTexturedTriangles(), that draws a list of triangles while applying an alpha-channel texture to the triangles. Where the alpha-channel texture is transparent, no pixels will be drawn to the screen.

Let T be an alpha-channel texture whose alpha-channel is initialized to completely opaque.

Once, up-front, for each trimming curve, C_1, C_2, …, C_n, draw the curve on T and then fill the trimmed portion of the curve with transparent pixels.

Each time the surface needs to be rendered:

- Call Tessellate() to get a list of triangles, L
- Call DrawTextured Triangles (L, T) to draw the list of triangles, L, using the alpha-channel texture, T